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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/781,801 | 02/12/2001 | Michael A. Peshkin | 98,593-C | 9006 |

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Pillsbury Winthrop LLP
Intellectual Property Group
P.O. Box 10500
McLean, VA 22102

EXAMINER

SHAPIRO, JEFFERY A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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3653

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/781,801

Applicant(s)

PESHKIN ET AL.

Examiner

Jeffrey A. Shapiro

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/22/03 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-4 and 6-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazerooni (US 6,386,513 B1) in view of Anderson et al (US 5,590,046).

Kazerooni discloses the following intelligent assist system.

As described in Claim 1 and 12-29;

1a. a plurality of wheels (71 and 81) *on the intelligent trolley module and configured to move the trolley along the track*; (See figures 8 and 9—see also figure 16, noting that it would not make sense for one to move a box(25) only vertically and not be able to move it also horizontally—otherwise, one could not move box (25) off of the lower box beneath it, for example, to obtain access to said lower box);

2. a communication interface (node) *on the intelligent trolley module* providing input/output communication with other intelligent modules (see col. 5, lines 57-67 and col. 6, lines 1-16, noting that computers that have “standard peripherals” generally have a modem, RF, wi-fi or broadband communication interfaces and devices, for example)—note also that the interface allows the “multi-function hub” to “pass the output signal to the assist system” by using either a modem, wi-fi, simple wire connection or other functional equivalent from the computer to the controlled motors;
3. a support moving a payload, wherein the support is a cable (13) lowered by a reel (11), wherein the reel comprises a slidable translating reel, and the reel further comprises a cam follower, a motor encoder, a position indicator).
4. a handle or pendent (16 and 26) which provides for an up or down signal to lift or lower a payload;
5. a pendent (16 and 26)
6. stop and reset buttons (note that the dead man switch and handle starts the action of the lift mechanism with a logic signal sent to the controller to start such action upon the depressing of the lever (26), after which, a different logic signal is sent to the controller to halt action of the lift mechanism upon releasing said lever—the depressing of the lever essentially resets the mechanism controller to start lifting again—see col. 6, lines 63-67 and col. 7, lines 1-4;

As described in Claim 2;

7. the actuator comprises gearing (see col. 5, lines 47-52);

As described in Claim 3;

9. the actuator comprises a motor (see col. 5, lines 38-40);

As described in Claim 9;

10. a position indicator (see col. 6, lines 3-16)

Kazerooni does not expressly disclose the following.

As described in Claims 1, 12 and 24;

1. an actuator *on the intelligent lift module* for driving at least one of the wheels;
2. a computational node *on the intelligent trolley* for controlling actuation of the motor driving the wheels of the trolley;

As described in Claims 4 and 23;

3. the computational node implements a virtual limit controlling motion of the trolley;

As described in Claim 6;

4. the trolley comprises a roller;

As described in Claims 7 and 8;

5. a manual or automatic roller release;

Anderson et al discloses the following.

As described in Claim 1;

1. an actuator for driving at least one of the wheels (136, 204 or 210);
2. a computational node (140) controlling actuation of the motor driving the wheels of the trolley (see also figures 2 and 3);

As described in Claims 4 and 23;

3. the computational node implements a virtual limit controlling motion of the trolley (note proximity switches (224, 218, 174 and 176) which are used to indicate limits of travel—see also col. 7, lines 20-25, describing bumpers on either aft or fore positions of the cart which engages obstructions);

As described in Claim 6;

4. the trolley comprises a roller (see figure 14);

As described in Claims 7 and 8;

5. a manual or automatic roller release (note that it would be expedient for one ordinarily skilled in the art to use either a manual or automatic brake—this is well known in the art—see also Kazerooni et al, figure 18B (note “engage the brake” step) and Santos, col. 5, lines 3-15, for example);

Both Kazerooni and Anderson et al are analogous art because they both concern assisted/automatic lifting technology for the manufacturing environment.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have used the actuator and the driver of the wheels of the trolley of Anderson

et al in the trolley of Kazerooni. It also would have been obvious to use the limit switches of Anderson in the system of Kazerooni.

The suggestion/motivation would have been to assist the operator of the lifting apparatus to move the trolley across the rail horizontally without going off the ends of the rail/track. See col. 8, lines 18-22 of Anderson et al.

Note that the computer used by Kazerooni is readily interfactable by those ordinarily skilled in the art with the computer of Anderson et al, for example, in a master-slave configuration, in order to operate the drive wheels of the trolley. Further, it would have been expedient for one ordinarily skilled in the art to modify the computer of Kazerooni by itself to operate the drive wheels of the trolley. In addition, the illustration of a wheeled mechanism in figures 9, 11a and 11b of Kazerooni et al suggests that the lifting mechanism is intended to move horizontally across the beam on which it is mounted. Further, again note that, as shown in figure 16, it would not be logical for one ordinarily skilled in the art to want to only move box (25) vertically off of the lower box on which it sits.

Therefore, it would have been obvious to combine Kazerooni and Anderson et al in order to obtain the invention as described in Claims 1-4 and 6-29.

4. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazerooni in view of Santos. Kazerooni discloses the apparatus described above. Kazerooni does not expressly disclose the following.

As described in Claims 7 and 8;

1. a manual or automatic roller release;

Santos discloses the following.

As described in Claims 7 and 8;

1. a manual or automatic roller release (note that it would be obvious to one ordinarily skilled in the art to use either a manual or automatic brake—see also col. 6, lines 3-16);

Both Santos and Kazerooni are considered to be analogous art because they both concern hoist mechanisms.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have used automatic or manual braking of the trolley, as taught by Santos, in the trolley of Kazerooni.

The suggestion/motivation would have been to assist the operator of the lifting apparatus to move the trolley across the rail horizontally for maintenance purposes, for example, when the electricity has been disabled. In addition, note that it is considered to be obvious to make a manual device automatic and an automatic device manual. It has been generally recognized that to automate a previously manual operation with the use of conventional control involves only routine skill in the art. Therefore, it would have been obvious to substitute automated braking means as automated control means for the manual control means. *In re Venner*, 120 USPQ 193 (CCPA 1958).

Therefore, it would have been obvious to combine Kazerooni and Santos in order to obtain the invention as described in Claims 7 and 8.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kazerooni in view of Anderson et al and further in view of Schroeder et al. Kazerooni and Anderson et al disclose the apparatus described above. Kazerooni does not expressly disclose, But Schroeder et al discloses the following.

As described in Claims 10 and 11;

11. a hall switch (116) for a position indicator and monitoring the motion of various components of the system; (Note that, at the very least, it is necessarily so that a position indicator would be used by the system of Kazerooni to indicate where the moving ends of the system are located, and that a hall switch is a functional equivalent well known to those ordinarily skilled in the art for indicating position. Note also that motion indicators and sensors, such as encoders and rotary scales are used to determine the rotation of the hub, for example. See Schroeder, col. 6, lines 65-68 and col. 7, lines 1-4 which describes such a hall effect sensor being used in a trolley hoist for determining location. Note also that the trolley of Schroeder has forward, reverse and vertical operator direction controls through an actuator for the wheels of the trolley.)

Kazerooni, Anderson and Schroeder are considered to be analogous art because they both concern hoist mechanisms and associated controls.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have used the hall effect sensor location system, as taught by Schroeder, in the trolley of Kazerooni.

The suggestion/motivation would have been to sense location and position of the cable and associated gears/shafts and communicate such information to the computer used by the system of Kazerooni. See again, Schroeder, col. 7, lines 3-4. See also col. 9, lines 54-68.

Therefore, it would have been obvious to combine Kazerooni and Schroeder in order to obtain the invention as described in Claims 7 and 8.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-4 and 6-29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-31 of copending Application No. 09/781,686. Although the conflicting claims are not

identical, they are not patentably distinct from each other because the both claim a hub assist system with computer control.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

7. Applicant's arguments filed 9/22/03 have been fully considered but they are not persuasive.

Applicants' Independent Claims 1, 12 and 24 recite an "intelligent trolley module" with an "actuator" connected to a "computational node", all on the "intelligent trolley module". A "communication interface" is also provided on the "intelligent trolley module" to facilitate communication between the trolley module and other "intelligent trolley modules."

An "intelligent trolley module" appears to be alluded to in the specification as an intelligent assist device (IAD) which employs a trolley with an actuator that drives the wheels of the trolley across a rail. Kazerooni discloses such a device, which, as described above, a "human power amplifier for lifting loads." See title of Kazerooni patent.

An intelligent assist device appears to be devices in "a class of computer-controlled machines that interact with a human operator to assist in moving a payload." See Applicant's specification at p. 3, lines 16-20. These devices are used for strength

amplification in material handling environments. See Applicant's specification at p. 3, lines 16-20 and p. 4, lines 1-6.

Kazerooni's device is considered to be an IAD because it employs a computer/controller (20) which adjusts the hoist system based on minor adjustments made by a human operator to "amplify" the strength of the operator inputs. As described above, Kazerooni discloses what appears to be a trolley in figure 9, having wheels. Kazerooni appears to be silent as to the driving of the wheels of the trolley. Note that the Examiner has not conceded that Kazerooni "does not disclose and actuator", but that it "does not *expressly* disclose an actuator." Kazerooni still highly *suggests* or *implies* that such an actuator is used. However, Anderson, as discussed above, *expressly* describes such structure. Schroeder also *expressly* discloses such structure. See, for example, figure 3a of Schroeder, which illustrates wheels (300 and 300a) with motor (114) which drives the wheels through shaft (113). The trolley also has a microprocessor controller (306) which controls the motor (114) and the hoist motors (119).

A "communication interface" is alluded to in the Applicant's specification as a communications connection between parts of the system. For example, the internet, wireless networks or Ethernet are mentioned in Applicant's specification at p. 17, lines 1-22 as being possible forms of communication interface nodes. These nodes also communicate with modules such as Hall effect sensor (107), providing location data, for example. See Applicant's specification at p.18, lines 1-10.

Kazerooni discloses at col. 5, lines 52-57, that his system uses a cable (21) to transmit signals from the actuator to the controller. Further, this cable can be replaced by alternative signal transmitting means such as optical or RF.

Anderson et al discloses using a server and Ethernet based network to transmit to various parts or nodes or modules of the system. The terms parts, nodes and modules appear to be functional equivalents to each other.

Computational nodes are defined in Applicant's specification as either a central processing unit (CPU), microcontroller or "other computational device capable of running a stored program and capable of communication with modules." See Applicant's specification at p.18, lines 20-22.

Kazerooni discloses that the controller (20) comprises "a computer" with "input output capability and standard peripherals." See col. 5, lines 60-65. Such peripherals are construed as including modems, RS-232 ports, and other communications interfaces. The controller is described in col. 5, lines 61-65 as "process[ing] the information that is received from various sensors and switches and to generate command signals for the actuator." The computer of Kazerooni is construed as being capable of running a stored program and communicating with other parts/nodes/modules of the system. Anderson, as described above, describes using Ethernet for communicating between various modules of the cell system and interfacing with a material handling controller. See figure 3.

As described previously, there is motivation/suggestion to combine the features of Anderson and Schroeder to obtain the missing features in Kazerooni. Kazerooni's

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system discloses a wheeled trolley on a rail. Schroeder discloses further details of such structure and control. The reason for using the details of Schroeder of an actuator and driver of the wheels is to make the trolley of Kazerooni go forward and backward on the rails. Again, this would appear to be expedient for one ordinarily skilled in the art, as one would want to be able to move cargo with the lifter in a vertical direction, then move it in a horizontal direction, then lowering it in a new location. Similar motivation appears to apply to the combination of Kazerooni and Anderson. Note also that it would have been obvious to one ordinarily skilled in the art to use the system of Kazerooni within the cells of Anderson. The reason would have been to provide a semiautomatic operator assisted workcell, thus making the system more flexible to varying throughput. Note again, that "little or no operator intervention" still implies that there is a possibility of some operator intervention. Kazerooni also discloses a controller in the form of a computer with standard peripherals. This appears to highly suggest having an interface with a cell controller, such as that of Anderson's system. Applicant's independent claims, when reasonably, broadly construed, appear to read on the prior art. Therefore, the rejection of claims 1-4 and 6-29 is maintained.

Regarding the double patenting rejection, described above, said rejection will be removed upon Applicant filing a proper terminal disclaimer.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bendzsak and Gomala et al are cited as describing hoist system

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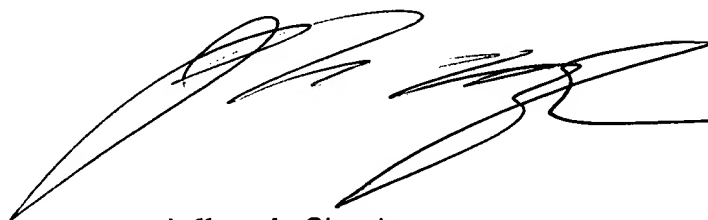
with computer control which communicates with a larger computer system/network.

Gomala is provided partially since there are 559 pages.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey A. Shapiro whose telephone number is (703)308-3423. The examiner can normally be reached on Monday-Friday, 9:00 AM-5:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald P. Walsh can be reached on (703)306-4173. The fax phone number for the organization where this application or proceeding is assigned is (703)306-4195.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1113.



Jeffrey A. Shapiro
Examiner
Art Unit 3653

November 10, 2003



DONALD P. WALSH
SUPERVISORY PATENT EXAMINER
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